



Transparency at CBO: Future Plans and a Review of 2021

Projected Acquisition Costs for the Army's Ground Combat Vehicles

APRIL 2021

The 2021 Long-Term Budget Outlook

How Increasing the Federal Minimum Wage Could Affect Employment and Family Income

APRIL 2021

Prescription Drug Spending, Use, and Price

JANUARY 2021

Illustrative Options for National Defense Under a Smaller Defense Budget

OCTOBER 2020

THE FEDERAL BUDGET IN FISCAL YEAR 2020

Revenues 16.3% of GDP, \$34.4 trillion

Mandatory Spending 21.8% of GDP, \$46.6 trillion

Discretionary Spending 7.8% of GDP, \$16.6 trillion

Net Interest 1.6% of GDP, \$345 billion

Outlays 31.2% of GDP, \$66.6 trillion

DEFICITS AND THE DEBT

Federal Deficits or Surpluses, 1971 to 2020

14.9% of GDP Deficit in 2020

3.3% of GDP Deficit on average over the past 50 years

\$3.1 Trillion Deficit in 2020

100% of GDP Debt held by the public at the end of 2020

44% of GDP Debt held by the public on average over the past 50 years

Federal Debt Held by the Public, 1971 to 2020

Prepared by Christine Szymanski, Dan Reilly, and Roger Gordon
Source: Congressional Budget Office, April 2021

Long-Term Costs of the Administration's 2022 Defense Budget

JANUARY 2022

Through the end of 2021, the Administration's 2022 defense budget would cost \$1.1 trillion more than the 2021 defense budget. The 2022 budget would also cost \$1.1 trillion more than the 2021 budget over the next 10 years.

Key findings:

- Increased spending on new advanced defense programs and research and development.
- Increased spending on military personnel and other support programs.
- Increased spending on military operations and maintenance.

The Distribution of Household Income, 2018

AUGUST 2020

Average Income, Mean, Total Taxation, and Federal Taxes

The Effects of Large-Scale Maintenance Actions on the Availability of the Air Force's Aircraft

SEPTEMBER 2021

All data are for fiscal year 2020, unless otherwise noted.

National Cruise Missile Defense: Issues and Alternatives

FEBRUARY 2021

TESTIMONY

CBO's Efforts to Enhance Its Transparency, Effectiveness, and Efficiency

Philip L. Swagell, Director

Before the Select Committee on the Modernization of Congress, U.S. House of Representatives

OCTOBER 21, 2021

At a Glance

The Congressional Budget Office's transparency efforts are intended to promote a thorough understanding of its work, help people gauge how estimates might change if policies or circumstances differed, and enhance the credibility of its analyses and processes. This report fulfills CBO's requirement to report on its plans for such efforts.

In 2022, the agency will undertake many activities, with a major focus on three:

- Explaining the methods it uses for its analyses in several topic areas, including health care, economic forecasting, climate change, and credit programs;
- Providing additional information to help people understand CBO's cost estimates; and
- Publishing its periodic compendium of options to reduce the federal budget deficit, with a focus on options that would offer large reductions.

Those efforts will build on progress that CBO made last year, which included testifying before Congressional committees and answering Members' questions, releasing data, evaluating the accuracy of the agency's estimates, comparing current estimates with previous ones, estimating the effects of policy alternatives, characterizing the uncertainty surrounding estimates, creating data visualizations, and conducting outreach.

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Transparency at CBO: Future Plans and a Review of 2021

Summary

Transparency is a top priority for the Congressional Budget Office, and the agency continues to bolster its efforts to be transparent.

When CBO says it strives to be transparent, it has three specific goals in mind:

- To promote a thorough understanding of the agency's analyses through accessible, clear, and detailed communication;
- To help people gauge how estimates might change if policies or circumstances differed; and
- To enhance the credibility of the agency's analyses and processes by showing that they are grounded in data and high-quality professional research and are informed by feedback from a range of subject-matter experts.

During the appropriation process for the legislative branch in 2020, the Congress directed CBO to produce a report "detailing the agency's ongoing and future efforts to implement the multiyear plan to increase its capacity to make CBO's work as transparent and responsive as possible" within 90 days of the enactment of its appropriation for 2021.¹ CBO published its first report in response to that directive in March 2021.² This edition updates CBO's transparency activities since that report was published and forecasts future work. A continually updated list of CBO's most recent activities is available at www.cbo.gov/about/transparency.

1. See Joint Explanatory Statement, Division I—Legislative Branch Appropriations Bill, 2021, *Congressional Record—House of Representatives*, vol. 166, no. 218, 116th Cong., 2nd Sess. (December 21, 2020), p. H8718.

2. See Congressional Budget Office, *Transparency at CBO: Future Plans and a Review of 2020* (March 2021), www.cbo.gov/publication/57008.

Future Plans

This year, CBO will undertake many different transparency activities. They include testifying before Congressional committees and answering Members' questions, explaining its analytic methods, releasing data, analyzing the accuracy of the agency's estimates, comparing current estimates with previous ones, estimating the effects of policy alternatives (including options to reduce the federal budget deficit, with a focus on options that would offer large reductions), characterizing the uncertainty surrounding estimates, creating data visualizations, and conducting outreach. In particular, the outreach will include continued interaction on a daily basis with the Congress to explain the agency's estimates and obtain feedback and with outside experts to obtain advice. Those projects for which the scope has been fully developed are described in this report; however, other projects will be initiated as well.

Providing information to help people understand CBO's cost estimates will also be an important focus. CBO will continue to explain key features of its cost estimates and important concepts related to the budget process, and it will provide information about uncertainty in its cost estimates.

Review of 2021

In 2021, as CBO pursued its goals for transparency, it undertook these 10 types of activities:

- **Testifying and publishing answers to questions.** CBO testified at five Congressional hearings and responded to requests from the Congress for public answers to specific questions. In addition to presenting written statements, making oral remarks, and answering questions at the hearings, the agency published answers to 18 written questions that Members submitted after the hearings in 2021.
- **Explaining its analytic methods.** CBO published various reports explaining its analyses and made supporting documents and some computer code

available. Also, in many cost estimates, CBO included a section describing the basis of the estimate.

- **Releasing data.** CBO began publishing estimates for legislation expected to be considered in the House of Representatives under expedited processes. *The Budget and Economic Outlook: 2021 to 2031, An Analysis of Certain Proposals in the President's 2022 Budget*, and several other reports were supplemented with comprehensive sets of data files. In total, 37 reports were accompanied by files providing the data underlying their figures.
- **Analyzing the accuracy of its estimates.** CBO released a comprehensive report about the accuracy of its economic forecasts.
- **Comparing its current estimates with its previous estimates.** In several of its recurring publications released in 2021, CBO explained the differences between its current projections and those the agency had previously published. In addition, cost estimates explained the extent to which the provisions being analyzed and the estimates for them were similar to or different from those in earlier cost estimates published during the same Congressional session.
- **Comparing its estimates with those of others.** CBO regularly compared its estimates with outside estimates—including the budget projections of the Administration, the economic projections of private-sector forecasters and other government agencies, and the policy analyses of various organizations. (In addition, when time did not allow for a formal publication, CBO often discussed comparisons with Congressional staff.)
- **Estimating the effects of policy alternatives.** CBO prepared reports and created interactive products to estimate the effects that alternative assumptions about future policies would have on economic and budgetary outcomes. Policies examined include changes to the defense budget, increases in infrastructure funding, and increases in the minimum wage.
- **Describing the uncertainty surrounding its estimates.** In cost estimates and several major reports—including those on the budget and economic outlook—the agency discussed the uncertainty surrounding its estimates.
- **Creating data visualizations.** To make CBO's projections and analyses easier to understand, the agency published visual reports, chart books, slide

decks, interactive tools, and infographics. In addition, CBO published visual summaries—short summaries that use figures to highlight the main points of a report—for several of its major reports.

- **Conducting outreach.** The most important form of outreach the agency performed in 2021 was the direct communication (in person, by phone, and by email) between CBO and the Congress. In addition, CBO solicited input from a range of policy experts through its Panel of Economic Advisers and Panel of Health Advisers and obtained many external reviews of its work. CBO staff also made presentations about the agency's processes and recently completed work. The agency also worked to make the information it provides more accessible.

Background

CBO's transparency efforts are built on a strong foundation that has been laid over many years. Recently, the agency has allocated additional resources to do even more. For 2021, the Congress increased CBO's budget, in part to continue hiring staff to contribute to transparency and responsiveness, building on the agency's expansion since 2018. Almost all CBO staff members contribute to the agency's transparency efforts by spending at least some of their time on such activities.

As CBO continues efforts to improve its transparency, it must constantly balance those efforts with its commitment to respond quickly to the Congress's needs and with its professional responsibility to release reports and estimates only when they reach sufficient quality. Being transparent has costs, and CBO must weigh the benefits and costs of devoting resources to different activities. The agency welcomes feedback about what people find most useful and suggestions about other ways in which it can provide more information about its work. To offer additional insight on those issues, in 2021, CBO published a [report](#) on the feasibility of publishing cost estimates before committee action begins.

CBO's efforts to be transparent enhance its long-standing commitment to providing information that is objective, insightful, timely, and clearly presented and explained. Those efforts support the agency's dedication to maintaining a level playing field regarding access to the information and analysis that it provides, thus ensuring that its work is made widely available to the Congress and the public. (Work on proposals that have not been

made public remains confidential to facilitate the development of legislation.)

CBO's transparency efforts complement its process for publicly releasing all of its formal cost estimates and analytic reports. Through that process, CBO delivers its work to interested Members of Congress and their staff, including the sponsor of legislation or requester of the report, the Chairman and Ranking Member of the committees with jurisdiction over the subject at hand, and the budget committees. At about the same time, the agency posts the work on its website. In addition, an email service and Twitter announcements notify subscribers when the agency publishes its work.

CBO's Transparency Plans for 2022

In 2022, CBO plans to continue its efforts to undertake the 10 types of transparency activities discussed above.

Testifying and Publishing Answers to Questions

CBO expects to testify about its budget and economic outlook and other topics as requested by the Congress in 2022. Testifying involves presenting written statements, making oral remarks, and answering questions at hearings, as well as publishing answers to questions that Members submit for the record after the hearings. CBO will also continue to respond to matters raised as part of the oversight provided by the budget committees and by the Congress more broadly. In addition, the agency expects that Members of Congress will ask other questions to which it will publish responses.

Explaining Analytic Methods

This year, CBO has already released five products that include explanations of the agency's analytic methods. The agency will continue to release products that explain models and methods that it uses to create cost estimates and support the analysis in its reports. Those products will cover a wide range of topics—health care, macroeconomic issues, taxation, and other topics.

CBO has already produced the following in 2022:

- An [assessment](#) of the macroeconomic effects of illustrative single-payer health care systems (published on February 23, 2022);
- An [analysis](#) of how CBO models effective tax rates on capital income and the [related code](#) for CBO's CapTax model (published on February 9, 2022);
- An [analysis](#) of differences between the prices paid by commercial health insurers for hospitals' and physicians' services and the prices paid in the fee-for-service Medicare program for those same services (published on January 22, 2022);
- A [report](#) on the trends in nationwide spending on prescription drugs over the 1980–2018 period, which also analyzed trends in spending, use, and prices in the Medicare Part D and Medicaid programs over the 2009–2018 period (published on January 19, 2022);
- A [report](#) on Ginnie Mae and the securitization of federally guaranteed mortgages (published on January 12, 2022); and
- An [analysis](#) of the long-term costs of the Administration's 2022 defense budget (published on January 11, 2022).

CBO will publish additional information on **health care**:

- The effects on the federal deficit of lowering the age of Medicare eligibility; and
- An analysis of policy approaches that aim to reduce the prices paid to hospitals and physicians in commercial health plans.

Forthcoming publications will provide more information on CBO's work on **macroeconomic issues**:

- A technical description of a model CBO uses to quantify the uncertainty of its projections of the unemployment rate;
- An analysis of the causes and consequences of fiscal crises;
- An examination of the economic effects of waiting to resolve long-term budgetary imbalance; and
- An examination of how consumers and companies form expectations of inflation.

Explanatory products on **other topics** scheduled to be completed this year include the following:

- An explanation of why CBO applies a revenue offset to estimates of changes in excise taxes and certain other taxes;
- An explanation of CBO's forecast of the Federal Reserve's balance sheet, the balance sheet's direct and indirect implications for the federal budget, and its connection to CBO's forecast of Federal Reserve policies;

- An explanation of how CBO analyzes the uncertainty of its projections in *The Long-Term Budget Outlook*;
- A report describing trends in the distribution of family wealth; and
- An analysis of the effects of work requirements and programs that support work in means-tested transfer programs.

Releasing Data

Whenever possible, CBO publishes extensive sets of data in conjunction with its major recurring reports. Those data sets include detailed information on the agency's 10-year budget projections; historical budget data; 10-year trust fund projections; revenue projections, by category; spending projections, by budget account; estimates of automatic stabilizers; tax parameters and effective marginal tax rates on labor and capital; long-term budget projections; 10-year projections of economic variables (including data about the economy's maximum sustainable output); and historical economic data.

The agency will also provide details—both in spreadsheets and in PDFs—about its baseline projections for these specific programs: the Federal Pell Grant Program, student loan programs, the Children's Health Insurance Program, federal subsidies for health insurance, Medicaid, Medicare, the military retirement program, the Pension Benefit Guaranty Corporation, the Social Security Disability Insurance program, the Social Security Old-Age and Survivors Insurance program, the trust funds for Social Security, child nutrition programs, child support enforcement and collections, foster care and adoption assistance programs, the Supplemental Nutrition Assistance Program, the Supplemental Security Income program, the Temporary Assistance for Needy Families program, the unemployment compensation program, the Department of Agriculture's mandatory farm programs, federal programs that guarantee mortgages, programs funded by the Highway Trust Fund, benefits for veterans and military personnel stemming from the Post-9/11 GI Bill, and veterans' disability compensation and pension programs.

In addition, when CBO publishes its analysis of the distribution of household income in 2019, it will release a table builder that allows people to explore CBO's database on the distribution of household income and federal taxes and transfers. When the agency analyzes the President's budget request for 2023, it will post a set

of files providing estimates of the budgetary effects of specific proposals. CBO has already published detailed data on expired or expiring authorizations of appropriations. Throughout the year, the agency will post the data underlying the figures in various reports. Also, CBO will continue to publish information about its estimates for appropriation bills in the more accessible format that it began using in 2019.

Analyzing the Accuracy of CBO's Estimates

CBO will continue its series of publications that review the accuracy of its outlay and revenue projections for the previous year. (One report, examining the accuracy of CBO's budget projections for fiscal year 2021, has already been released.) In addition, the agency will seek to identify opportunities to review the accuracy of its previous forecasts and cost estimates.

Comparing Current Estimates With Previous Estimates

In several of its recurring reports—about the budget and economic outlook, federal subsidies for health insurance, the costs of the Navy's shipbuilding plan, and the distribution of household income—CBO will continue to explain the differences between the current year's projections and those from the previous year. In its cost estimates, CBO will continue to identify related legislative provisions for which it has provided estimates during the current Congressional session and explain the extent to which the provisions and estimates at hand are similar or different.

Comparing CBO's Estimates With Those of Other Organizations

The agency will continue to regularly publish analyses comparing its budget projections with the Administration's and its economic projections with those of private forecasters and other government agencies. The agency will also include comparisons of estimates in various other reports. In addition, when time does not allow for publication but interest in a comparison of CBO's estimates with others' is high, analysts will discuss such comparisons with Congressional staff.

Estimating the Effects of Policy Alternatives

CBO will publish its periodic compendium of policy options and their effects on the federal budget, providing estimates of the budgetary savings from dozens of options that would decrease federal spending or increase federal revenues. Options that reduce the deficit by large

amounts will be a special focus in 2022. The agency will also publish reports that illustrate the potential economic effects of policy proposals across a range of topics. For example, it will analyze the effects of work requirements and programs that support work in means-tested transfer programs.

Characterizing the Uncertainty Surrounding CBO's Estimates

CBO's budget and economic estimates reflect the middle of a range of outcomes under a given set of policies. In its publications, CBO will discuss the sources of uncertainty in its analyses to help make clear the factors that might cause estimates or outcomes to differ in the future. In addition, cost estimates will continue to feature, when necessary, a section on specific areas of uncertainty in the estimate. The agency will also publish an explanation of how it analyzes the uncertainty surrounding economic projections in *The Long-Term Budget Outlook*.

Creating Data Visualizations

This year, CBO has already published a [visual report](#) that compares medical prices across different payers (published January 22, 2022) and [another](#) on its appropriation request (published February 22, 2022). CBO will also publish a visual report on family wealth. In addition, the agency will create infographics about actual outlays and revenues in 2021. CBO will update its interactive force structure tool—which allows users to manipulate the military's force structure and see the effects on the Department of Defense's operation and support costs and on the size of the military—to reflect current operating costs and to allow users to set a budget constraint and see its effects on forces. The agency will continue to look for opportunities to include graphics to enhance the explanations in some of its cost estimates.

Conducting Outreach

CBO will continue to communicate on a daily basis with people outside the agency to explain its findings and methods, respond to questions, and obtain feedback. The agency's Director will meet regularly with Members of Congress to do the same.

After CBO's baseline is published, agency staff will discuss the new projections with Congressional staff and answer their questions.

CBO will also continue to obtain and respond to input from its Panel of Economic Advisers and Panel of Health Advisers.

The agency will continue to turn to other experts as well. Many reports will benefit from written comments made by

outside experts on early drafts. For some recurring reports produced on compressed timetables, the agency will solicit comments on previous editions and on selected technical issues and use that feedback to improve future editions.

CBO staff will continue to give presentations on Capitol Hill—some in collaboration with the Congressional Research Service—on its budget and economic projections and on other topics. Those presentations allow CBO to explain its work and answer questions. The agency will also give presentations about its findings and about work in progress in a variety of other venues to offer explanations and gather feedback. In addition, CBO will publish HTML versions of all reports to make them more accessible.

A Review of CBO's Transparency Efforts in 2021

In 2021, CBO's publications—including reports, working papers, presentations, interactive tools, data sets, and computer code—contributed to transparency activities that can be grouped into 10 categories.

Testifying and Publishing Answers to Questions

In 2021, representatives of CBO appeared as witnesses at five Congressional hearings. In addition to presenting written statements, making oral remarks, and answering questions at the hearings, the agency published answers to written questions that Members submitted after the hearings. These are the venues and topics (along with CBO's answers to Members' questions):

- Before the House Select Committee on the Modernization of Congress on [CBO's Efforts to Enhance Its Transparency, Effectiveness, and Efficiency](#) (followed by [responses to two questions for the record](#) about improving the timeliness and accessibility of CBO's work);
- Before the Senate Finance Committee about [options for funding and financing highway spending](#) (followed by [answers to eight questions for the record](#) about infrastructure banks, airports' passenger facility fees, electric vehicles, and funding for the transit account of the Highway Trust Fund);
- Before the Senate Appropriations Committee's Subcommittee on the Legislative Branch about [CBO's budget request for fiscal year 2022](#) (followed by an [answer to a question for the record](#) about how the agency adjusts its resources to meet Congressional priorities);

- Before the Senate Environment and Public Works Committee about [the long-term solvency of the Highway Trust Fund](#) (followed by an answer to a question for the record on electric vehicle fees); and
- Before the House Appropriations Committee's Subcommittee on the Legislative Branch about [CBO's budget request for fiscal year 2022](#) (followed by answers to six questions for the record about the agency's work on pandemic-related legislation and the timeliness and prioritization of CBO's work).

In addition, in January 2021, CBO provided answers to five questions for the record, following up on the agency's October 2020 testimony about the long-term budget outlook before the Subcommittee on Fiscal Responsibility and Economic Growth of the Senate Finance Committee.

Explaining Analytic Methods

CBO's estimates are produced by teams of people who use information obtained from experts, data, and research to determine which analytic methods to use. The agency aims to explain its methods, sometimes for a general audience and sometimes by providing technical information.

General Information. In 2021, CBO published the following material providing details about methods underlying particular analyses and offering additional detail on issues:

- A [slide deck](#) about using survey data for tax analysis;
- A [report](#) about how the specifications of the reference tax system affect CBO's estimates of tax expenditures;
- A [report](#) on the distribution of major tax expenditures in 2019 (see the [appendix](#));
- A [blog post](#) on the effects of increased funding for the Internal Revenue Service;
- A [letter](#) on the feasibility of providing formal cost estimates before committee activity begins;
- A [report](#) on federal estate and gift taxes;
- An [update](#) to CBO's primer on the U.S. military's force structure;
- A [report](#) on the budgetary effects of climate change and potential legislative responses;
- An [interactive version](#) of the model CBO uses to project discretionary spending;
- A [report](#) on the cost of government activities that involve financial risk; and
- A [report](#) on issues and alternatives in national cruise missile defense (see [Appendix B](#)).

In addition, as part of its work on H.R. 5376, the Build Back Better Act, CBO published documents providing additional details on the potential effects of several policies in that legislation:

- A slide deck on the economic effects of expanding home- and community-based services in Medicaid;
- A slide deck on the economic effects of expanding subsidized child care and providing universal preschool;
- A slide deck on the economic effects of offering a federal paid family and medical leave program; and
- A slide deck comparing the effects of paying for drugs in Medicare Part D under current law and under proposals to redesign the program.

CBO also produced two primers on budgetary issues. The first explains the budgetary scorekeeping guidelines that inform CBO's estimates. The second explains common budgetary terms used in CBO's publications.

Technical Information. CBO also published details intended to help analysts outside the agency understand its work.

On health care, CBO published the following:

- An updated [description](#) of HISIM2, the health insurance simulation model used in preparing CBO's July 2021 baseline budget projections;
- A [working paper](#) on the construction of synthetic firms in HISIM2;
- A [working paper](#) on CBO's simulation model for analyzing legislative proposals that could substantially affect the development of new drugs;
- A [report](#) that compares brand-name drug prices among selected federal programs (technical details are discussed in the [appendix](#)); and
- A [working paper](#) on CBO's model of drug price negotiations under H.R. 3, the Elijah E. Cummings Lower Drug Costs Now Act.

On **energy, climate, and transportation**, CBO released these publications:

- A [working paper](#) on how carbon dioxide emissions would change in response to a tax or allowance price;
- A [working paper](#) estimating how much state and local governments that receive federal grants for highway capital projects substitute that funding for their own spending on highway capital;
- A [working paper](#) describing CBO’s method for measuring the distributional effects of a tax on carbon emissions; and
- A [slide deck](#) offering technical information about how CBO models the effects of climate change on output in its long-term economic projections.

Explanations of CBO’s **financial analysis** included the following:

- A [working paper](#) describing the methods and data that CBO uses to estimate the cost of market risk for three categories of federal credit programs;
- A [working paper](#) on considerations in fair-value budgeting;
- A [working paper](#) on governmental risk taking under market imperfections; and
- A [working paper](#) on fair-value cost estimation and government cash flows.

On **tax and transfer policies**, CBO published the following analyses:

- A [report](#) examining the distribution of household income in 2018 (see [Appendix A](#) and [Appendix B](#));
- A [working paper](#) on the extent to which payroll taxes are passed through to employees;
- A [working paper](#) on discrete choice models for estimating how changes in tax and transfer policies affect labor supply; and
- A [working paper](#) on the economic effects of financing a large and permanent increase in government spending.

Publications on **other topics** included the following:

- A [working paper](#) examined how the federal budget deficit would have differed in 2018 under four scenarios that vary the distribution of labor earnings while leaving aggregate earnings unchanged;

- A [working paper](#) on CBO’s model and projections of U.S. international investment holdings and income flows;
- A [report](#) on usage patterns and costs of unmanned aerial systems (see the [appendix](#));
- A [slide deck](#) about CBO’s policy growth model;
- An [interactive](#), including computer code, on how increases in the federal minimum wage could affect employment and family income; and
- A [working paper](#) on estimating the legal status of foreign-born people.

Releasing Data

In 2021, CBO began publishing weekly tables that include estimates for legislation expected to be considered in the House of Representatives under the suspension of the rules (the process by which the House can pass a bill in an expedited manner). Those tables provide the bill number and name, a summary of the effects on mandatory spending and revenues, and links to the bill text and a published estimate, if available.

In 2021, CBO also provided many files of data underlying the analyses for its major reports and a number of other studies. The agency maintains a page on its website with links to current and past releases of the [budget and economic data](#) underlying its key projections.

New files on the following topics were posted on the website at least once, and in some cases twice, related to updates the agency made to its budget and economic baselines in February and July of 2021:

- [10-year budget projections](#), including projections of federal spending, revenues, deficits, and debt held by the public;
- [Historical budget data](#), showing revenues, outlays, and the deficit or surplus since 1965;
- [10-year trust fund projections](#), showing the balances and the deficits or surpluses for Social Security, Medicare, military retirement, civilian retirement, and other trust funds;
- [Revenue projections, by category](#), with additional details about adjusted gross income, taxable income, and income tax liability;
- [Spending projections, by budget account](#), which show budget authority and outlays organized by Treasury identification number;

- The tax parameters and effective marginal tax rates on labor and capital used in CBO’s microsimulation tax model and economic forecast, respectively;
- Long-term budget projections, showing estimates of CBO’s key projections in a 30-year budget window;
- 10-year economic projections, showing estimates of output, prices, labor market measures, interest rates, income, and other economic factors; and
- Historical economic data, including estimates of output, prices, labor market measures, interest rates, income, and other economic factors.

CBO also maintains a page on its website with details about many of its past and current [10-year baseline projections for selected programs](#). In all, the agency publishes 25 files with information on different programs; some of those files were updated twice in 2021, depending on the program.

Some of those files provide information on health and education programs:

- [Data on the Federal Pell Grant Program](#) include projections of the program’s three sources of funding—discretionary budget authority, which provides the largest portion and supports a maximum award that is set in the annual appropriation act; mandatory budget authority, which is specified in the Higher Education Act of 1965; and a “mandatory add-on,” which is automatically added (on the basis of a formula) to the discretionary portion of each award.
- [Data on student loan programs](#) provide details on the agency’s projections of the cost for each associated budget account (estimated using the procedures established in the Federal Credit Reform Act, or FCRA), projections of loan volume and subsidy rates for the direct student loans made using those procedures, estimates of administrative costs, projections of interest rates for borrowers, and projections of the cost of the programs made using fair-value estimating procedures.
- [Data on the Children’s Health Insurance Program](#) include projections of federal funding, average monthly enrollment in the program by age, average annual federal spending per enrollee, and details on the total funding available based on the budget authority and other factors.
- [Data on federal subsidies for health insurance](#) (including the effects of the Affordable Care Act) provide details about the agency’s projections of health insurance coverage and its projections of net federal subsidies associated with each type of insurance coverage.
- [Medicaid data](#) provide details about the agency’s projections of federal payments by type of Medicaid benefit, including acute care, fee-for-service, managed care, Medicare premiums, long-term care, and vaccines for children. Also included in the files are details on enrollment, total payments, and payments per enrollee by Medicaid eligibility category (aged, blind and disabled, children, and adults).
- [Medicare data](#) include detailed projections of mandatory outlays, benefit payments, annual growth rates, payment updates and changes in price indexes, enrollment, the status of the Hospital Insurance Trust Fund, and offsetting receipts.

Other program-specific files relate to pensions and Social Security:

- [Data about the military retirement program](#) include projections of the number of beneficiaries and average annual benefits for retirees and for surviving spouses and dependents of deceased service members.
- [Data about the Pension Benefit Guaranty Corporation](#) provide details on CBO’s projections of premiums, interest receipts, and outlays for the single-employer program, the multiple-employer plan, and administrative costs.
- [Data on the Social Security Disability Insurance program](#) include projections of the number of beneficiaries, the average monthly benefit, the average wage for indexing, the maximum amount of taxable earnings, the cost-of-living adjustment, and other factors.
- [Data about the Social Security Old-Age and Survivors Insurance program](#) include projections of the number of beneficiaries and the average monthly benefit for retired workers and families and for surviving spouses and dependents. Projections of the average wage for indexing, the maximum amount of earnings that is taxable, the cost-of-living adjustment, and other factors are also provided.
- [Data on the Social Security trust funds](#) provide details about CBO’s projections of outflows for benefits and other costs and of income from payroll taxes, interest, and other sources.

The program-specific files also cover other income security programs:

- [Data on child nutrition programs](#) provide details about CBO's projections of the consumer price index for food away from home and of budget authority for the National School Lunch Program, the School Breakfast Program, the Child and Adult Care Food Program, the procurement of commodities, the Summer Food Service Program, state administrative expenses, and other spending.
- [Data on child support enforcement and collections](#) include projections of administrative costs, incentive payments, and other payments, as well as projections of collection amounts.
- [Data about foster care and adoption assistance programs](#) include projections of outlays for maintenance, administration, training, and other costs, as well as projections of average monthly caseloads.
- [Data on the Supplemental Nutrition Assistance Program](#) include projections of total benefit amounts, administrative costs, average monthly participation, average monthly benefits, changes in the cost of the Thrifty Food Plan, and the unemployment rate.
- [Data on the Supplemental Security Income program](#) include projections of the number of beneficiaries who are aged, blind, or disabled adults and of the number who are blind or disabled children. Projections of the number of awards and average monthly benefits for each of those groups are also provided.
- [Data on the Temporary Assistance for Needy Families program](#) include projections of budget authority for state family assistance grants, grants related to marriage and fatherhood, and other types of assistance.
- [Data about the unemployment compensation program](#) include projections of regular benefits, extended benefits, and trade adjustment assistance. Projections of average weekly benefits, the average duration of benefits, the number of people receiving first payments, the number of people in the labor force, and the unemployment rate are also provided.

Data files for some other programs are published as well:

- [Data on the Department of Agriculture's mandatory farm programs](#) include projections of outlays for crop insurance, conservation programs, disaster

assistance, and assistance from the Commodity Credit Corporation account and related accounts. Projections of the supply of the following crops and of outlays related to them are also provided: corn, soybeans, wheat, upland cotton, rice, peanuts, sorghum, barley, oats, sunflower seed, canola, flaxseed, safflower, mustard seed, inedible rapeseed, extra-long-staple cotton, dry field peas, lentils, dairy, and large and small chickpeas.

- [Data about federal programs that guarantee mortgages](#) include projections of the budgetary effects of the activities of Fannie Mae and Freddie Mac, the Federal Housing Administration's Mutual Mortgage Insurance Fund, the home loan program for veterans, and the Government National Mortgage Association's mortgage-backed securities program. Estimates of the value of annual loans and subsidy rates are also provided.
- [Data on programs funded by the Highway Trust Fund](#) include projections of the start-of-year balances, revenues and interest, outlays, and cumulative shortfalls of the fund's highway and transit accounts.
- [Data on Post-9/11 GI Bill benefits](#) include projections of the number of veterans and military personnel who will receive benefits and the average annual payments.
- [Data on veterans' disability compensation and pension programs](#) include projections of the number of beneficiaries and the average annual benefits for veterans and for surviving spouses and dependents.

Four files were posted with last year's report on the long-term budget outlook:

- [Data on the long-term budget projections](#) include the parameters that CBO used in its macroeconomic model, data about demographic and economic factors, labor force participation rates by age group and sex, information about trust funds, and other details.
- [Data underlying CBO's Social Security estimates](#) include projections of the following variables: the number of covered workers; covered and taxable earnings; the number of Old-Age, Survivors, and Disability Insurance beneficiaries; cost and income rates; the number of immigrants and emigrants; fertility rates; mortality rates; the size of the population; average interest rates; mortality improvements by age group; and labor force participation rates.

- [Data on the long-term economic projections](#) include extensions of 10-year economic projections for additional decades.
- [Data on the demographic projections](#) include projections of the size of the population, immigration, emigration, mortality, and fertility.

When CBO published its [analysis of the President’s budget request for 2022](#) in July 2021, it published estimates for the Administration’s request for discretionary funding and some mandatory proposals, rather than for all proposals included in the request. CBO published a limited analysis because it was focused on legislative requests.

In 2021, supplemental data accompanied several other analyses:

- [Data](#) underlying the long-term projections for Social Security, including projections of Social Security tax revenues and outlays, projections of gross domestic product (GDP) and taxable payroll, and estimates of the benefit reductions needed to achieve 75-year solvency;
- [Historical data](#) about the distribution of household income, including distributions by household type and income group as well as estimates of demographics, average household income, components of income before transfers and taxes, components of means-tested transfers, components of federal taxes, means-tested transfer rates, federal tax rates, shares of household income, shares of means-tested transfers, and shares of federal taxes owed;
- A [table builder](#) that allows users to build their own tables with data on the distribution of household income, federal taxes, and means-tested transfers for the years 1979 to 2018;
- [Supplemental tables](#) that provide a summary of CBO’s analysis comparing estimates made following procedures set out in FCRA and those made accounting for the market value of government obligations (called fair-value estimates) for federal credit programs, identify discretionary programs with zero or negative FCRA subsidy rates and positive fair-value subsidy rates, and provide details underlying CBO’s fair-value estimates; and
- [Data](#) about the estimated budgetary effects of laws enacted during the second session of the 116th Congress.

In addition, CBO published a [report](#) on its access to data from federal agencies. CBO collects [all publications with data files](#) in one location on its website.

Analyzing the Accuracy of CBO’s Estimates

In 2021, in an [update](#) to a recurring report, CBO assessed the accuracy of its two- and five-year economic forecasts.

Comparing Current Estimates With Previous Estimates

In 2021, CBO explained the differences between the current year’s projections and those of the previous year in several of its recurring publications. The agency also provided additional comparisons of its estimates when it updated budget and economic projections as the extent of the pandemic became apparent. The explanations provide insight into the agency’s methods by indicating why it changed its projections.

In *The Budget and Economic Outlook: 2021 to 2031* ([pages 16 to 17](#)), CBO explained the differences between CBO’s current projections and those that it published in 2020. In particular, CBO discussed how the downturn in 2020 was not as severe as expected and how the first stage of the recovery took place sooner and was stronger than expected.

In *Additional Information about the Updated Budget and Economic Outlook: 2021 to 2031* ([Appendix A](#)), published in July, the agency explained why its baseline budget projections had changed since February of that year when the agency had last published them. The updated projections incorporated legislative changes to address the coronavirus pandemic and the resulting economic disruption, revisions to CBO’s forecast of economic activity and interest rates, and several technical changes.

In *The 2021 Long-Term Budget Outlook* ([Appendix B](#)), CBO explained the differences between the agency’s current projections and those it published the previous year. In particular, the agency reviewed the reasons for changes in its projections of spending for Social Security, major health care programs, programs related to pandemic relief, other programs, and interest. CBO also discussed the reasons for changes to its projections of revenues and to its projections of Social Security’s long-term finances.

In its annual [report](#) on the Troubled Asset Relief Program (TARP), CBO updated its estimate of the costs of the program. CBO’s 2021 estimate—a net cost of about \$31 billion—was similar to its March 2020 projection

and about \$1 billion lower than the Administration's estimate.

Comparing CBO's Estimates With Those of Other Organizations

CBO regularly makes comparisons with the budget projections of the Administration, but opportunities for comparisons with other organizations are rare, primarily because not many other organizations focus on federal costs. By contrast, the agency always has the opportunity to compare its economic projections with those of private forecasters and other government agencies, and sometimes it is able to make comparisons with other organizations' policy analyses. (Some of those comparisons are discussed with Congressional staff when time does not allow for preparing a formal presentation.) CBO's estimates can differ from others' for a variety of reasons, including differences in the policies considered, the data used, the interpretation of research findings, and analytic approaches. In 2021, CBO compared its budget projections with those of the Administration, private-sector forecasters, and other federal agencies.

In a 2021 [update](#) to its economic forecasting record, CBO compared its forecast with the range of forecasts from about 50 private-sector forecasters and the Administration. In general, CBO's forecasts of economic variables considered tended to exhibit small positive average errors—that is, on average, they were too high by small amounts. CBO also found that, over time, its forecasts displayed similar error patterns as the Administration and the *Blue Chip* consensus.

In a spreadsheet analyzing certain proposals in the President's budget for 2022 (in [Table 1](#)), CBO compared its estimated deficits under current law with the Administration's projections. CBO's forecast deficit was lower than the Administration's over the 2022–2031 period. CBO and the Administration estimated similar revenues over the window, but CBO's estimate of outlays was lower.

In *The Role of the Department of Veterans Affairs in the Single-Family Mortgage Market* ([page 13](#)), CBO compared its estimates of those effects with the Administration's estimates. CBO's estimate of the subsidy rate was higher than the one published by VA largely because CBO projects more cumulative lifetime defaults.

In *An Analysis of the Navy's December 2020 Shipbuilding Plan* ([Appendix B](#)), the agency compared its estimates with those of the Navy. CBO's estimates were higher in large part because the agency estimated higher costs for two classes of ships: the future attack submarine and the future large surface combatant.

Estimating the Effects of Policy Alternatives

CBO's baseline budget projections—which are constructed in accordance with provisions of law—are intended to show what would happen to federal spending, revenues, and deficits if current laws generally remained unchanged. Estimating the effects of policy alternatives promotes understanding of why and how estimates can differ and how large the effects of the alternatives might be; CBO therefore also published many products about specific policies and programs that compare projected economic and budgetary outcomes under multiple policy scenarios:

- In *Illustrative Options for National Defense Under a Smaller Defense Budget*, the agency created three broad options to show the range of strategies that the United States could pursue under a budget that would be cut gradually by a total of \$1 trillion, or 14 percent, between 2022 and 2031.
- *An Analysis of the Navy's Fiscal Year 2022 Shipbuilding Plan* reviewed the Navy's proposal and estimated its effects on the budget, fleet size, and missile capacity.
- In *Alternative Approaches to Adjusting Military Cash Pay*, CBO examined the implications of using different inflation factors to modify military compensation.
- In *Effects of Physical Infrastructure Spending on the Economy and the Budget Under Two Illustrative Scenarios*, the agency analyzed two scenarios for financing an increase of \$500 billion for infrastructure projects over 10 years.
- In *Budgeting for Federal Investment*, the agency examined budgetary options that would distinguish expenditures for investment in physical capital, education, and research and development from other expenditures.
- *A Public Option for Health Insurance in the Nongroup Marketplaces* described the key design considerations for nongroup health insurance plans administered by the federal government and some of their major implications.

- An interactive tool allows users to adjust the federal minimum wage and the speed of its implementation to estimate the impact on employment and the number of people living in poverty.
- In *The Capacity of the Navy's Shipyards to Maintain Its Submarines*, CBO projected that required maintenance will continue to exceed naval shipyards' capacity and examined options to reduce delays.
- In *National Cruise Missile Defense: Issues and Alternatives*, CBO examined the threat that adversaries equipped with land-attack cruise missiles might pose to the U.S. homeland and estimated the costs of several defensive systems that could be fielded to protect the United States from such attacks.

Characterizing the Uncertainty Surrounding CBO's Estimates

CBO's budget and economic projections reflect the middle of a range of outcomes under a given set of policies. CBO's analysts often test the sensitivity of their projections to identify the range of possible outcomes for those projections and to observe the way that projections change as factors vary. Likewise, in its cost estimates, CBO aims to produce estimates that generally reflect the middle of a range of the most likely budgetary outcomes that would result if the legislation was enacted. In 2021, CBO provided several explanations regarding sources of uncertainty in its reports to help policymakers understand the factors that might cause outcomes or future estimates to differ from the agency's current estimates.

In *CBO's Economic Forecasting Record: 2021 Update* (page 22), CBO explained the statistical methods it uses to quantify the uncertainty in its projections and illustrate the range of possible outcomes when developing the agency's subsequent forecasts.

In *Additional Information about the Updated Budget and Economic Outlook: 2021 to 2031*, CBO discussed uncertainty in both the budgetary forecasts (page 23) and economic forecasts (page 45).

In *How Changes in Economic Conditions Might Affect the Federal Budget, June 2021* (an interactive workbook), CBO illustrated how economic scenarios that differed from those in CBO's February 2021 baseline budget projections would affect the federal budget.

In *The 2021 Long-Term Budget Outlook* (page 28), the agency discussed the uncertainty in its long-term

forecast, focusing on the pandemic and its possible effects on a number of factors, including demographics, the economy, and health care spending.

How Changes in Revenues and Outlays Would Affect Debt Service, Deficits, and Debt (an interactive workbook) allows users to explore how revenues and outlays that differed from those in CBO's February 2021 baseline budget projections would increase or decrease net interest costs and thus affect deficits and debt.

In *The Budget and Economic Outlook: 2021 to 2031* (pages 15 to 16), the agency described how economic outcomes might differ from CBO's projections as a result of a number of factors, including the course of the pandemic, the effectiveness of monetary and fiscal policies, and the response of global financial markets to substantial increases in public deficits and debt.

In *The Budgetary Effects of the Raise the Wage Act of 2021* (page 6), CBO described the sources of uncertainty in its estimate for the legislation.

Creating Data Visualizations

To make CBO's projections and reports easier to understand, the agency publishes data visualizations that highlight the key findings of its analyses.

It published four visual reports in 2021.

- In *The Effects of Large-Scale Maintenance Actions on the Availability of the Air Force's Aircraft*, CBO examined the availability of six Air Force aircraft fleets after large-scale maintenance performed since the mid-1990s.
- In *Usage Patterns and Costs of Unmanned Aerial Systems*, the agency analyzed the usage patterns and costs of three unmanned and six manned aircraft with similar ISR missions and compared the life-cycle costs per flying hour.
- In *Projected Acquisition Costs for the Army's Ground Combat Vehicles*, CBO explained its estimates for those vehicles in a series of graphs and pictures.
- In *An Analysis of the Navy's December 2020 Shipbuilding Plan*, CBO used charts and graphs to explain its estimates of the total shipbuilding budget.

CBO also produced interactive tools that allow users to model the budgetary effects of policy options and economic changes.

- A workbook models how changes in economic conditions affect the federal budget.
- CBO’s interactive force structure tool enables users to vary inputs such as the size and type of force and see how those choices would affect total military personnel and costs.
- An interactive tool allows users to adjust the federal minimum wage and the speed of its implementation to estimate the effects on employment and the number of people living in poverty. It also allows the user to model different outcomes from changes to the minimum wage and displays those effects in charts and graphs.
- CBO’s waterfall model simulates the agency’s process for projecting discretionary budget authority and outlays for different types of spending over the course of 10 years.
- An interactive workbook shows how changing revenues and outlays would increase or decrease net interest costs.

CBO also published four infographics:

- “The Federal Budget in Fiscal Year 2020: An Infographic” shows the major categories of federal outlays and revenues and illustrates trends in federal deficits and debt held by the public over the past 50 years.
- “Revenues in Fiscal Year 2020: An Infographic” illustrates trends in sources of federal revenues—individual income taxes, payroll taxes, corporate income taxes, and other taxes—over the past 20 years and presents details about those sources in 2020.
- “Mandatory Spending in Fiscal Year 2020: An Infographic” shows changes in several categories—including spending for the major health care programs, Social Security, and income security programs—since 2000 and presents details about spending within those categories.
- “Discretionary Spending in Fiscal Year 2020: An Infographic” shows changes in defense and nondefense discretionary spending since 2000 and presents details about spending within those categories.

CBO published two chart books, which use figures to illustrate their main points:

- *The Distribution of Household Income, 2018*; and
- *The Distribution of Major Tax Expenditures in 2019*.

CBO also published two tables that provide an overview of the budgetary effects of legislation enacted in response to the pandemic. The first includes the effects of legislation enacted in March and April of 2020. The second describes the legislation enacted in December 2020 and March 2021.

Conducting Outreach

In addition to conducting the daily gathering of information that supports the agency’s work, CBO staff communicate every day with people outside the agency to explain its findings and methods and to obtain feedback that helps it maintain and improve the quality of its work. As part of its outreach, CBO consults with experts outside the organization to obtain feedback that complements its rigorous internal review process (which involves multiple people at different levels in the organization). The agency also explains its work and obtains feedback by encouraging its staff to give presentations to various audiences. Finally, CBO continually works to make the information it provides more accessible.

Direct Communication With Members and Staff. The most important form of outreach CBO conducted in 2021 was the direct communication between CBO and the Congress that occurred in person, by phone, and by email. CBO’s Director met regularly with Members of Congress to explain the agency’s work, respond to questions, and solicit feedback.

During the development of legislation, communication between CBO staff and Congressional staff was frequent. After major cost estimates were released, CBO staff reached out to staff of key committees to explain the results and answer questions.

Additionally, CBO staff attended the Legislative Branch Bulk Data Task Force’s internal and public meetings in 2021 and participated in the group’s first internal meeting of 2022. The task force consists of representatives from Legislative Branch agencies who coordinate on ways to support openness and transparency in the legislative process.

Consultation With Outside Experts. As part of its regular processes of developing cost estimates and undertaking other analyses, CBO consults with numerous

outside experts who represent a variety of perspectives. The experts include professors, analysts at think tanks and consulting firms, representatives of industry groups, other experts in the private sector, and people working for federal agencies and for state and local governments. CBO obtains suggestions about whom to consult and independently seeks other experts so that the agency can gather information and insights from people with varied backgrounds, training, experience, and views. (The agency always works with Congressional staff to ensure that information about a legislative proposal that they wish to keep confidential remains so during its development.) When time allows, CBO seeks external review of its methods and of drafts of reports. Such external review allows the agency's analyses to reflect both the consensus and the diversity of views of experts from around the country. In 2021, CBO continued those practices of extensive consultation with outside experts while preparing various analytic products.

CBO's full [Panel of Economic Advisers](#) met four times in 2021, and smaller groups of panelists met throughout the year. As part of the agendas for those meetings, CBO requested and received feedback on its economic forecasting methods, its analysis of the effects of expanding subsidized child care and providing universal preschool, and its projections of interest rates. Panelists and invited experts also discussed broad issues underlying various analyses by CBO, including labor force participation, the outlook for inflation, and the effects of the American Rescue Plan Act.

The meeting of the [Panel of Health Advisers](#) included presentations and discussions about the effects of the coronavirus pandemic on health care spending, telehealth, and incentives for research and development in the pharmaceutical industry.

When it obtains written feedback about an analysis, CBO acknowledges that assistance in a section called About This Document at the end of a publication. CBO obtained written feedback on drafts of 42 reports and working papers in 2021.

Presentations. CBO gave the following presentation so that Congressional Members and staff could learn more about the agency's work and have their questions answered:

- A presentation at a seminar hosted by the Congressional Research Service to staff explaining

CBO's projections for the federal budget and the economy over the coming decade.

Members of CBO's staff also gave presentations about the agency's processes for conducting analyses at many other venues (listed in parentheses):

- A presentation on [CBO's projection of tax revenues](#) (for the National Association of Legislative Fiscal Offices) explained how the agency develops its forecast for tax collections.
- A presentation on [CBO's health insurance simulation model \(HISIM2\)](#) (to the International Microsimulation Association) described the data and methods CBO uses to construct the model used to estimate insurance coverage among the U.S. population.
- A presentation on [the agency's role in the budget process](#) (at the AcademyHealth 2021 Health Policy Orientation) described how CBO helps the Congress make effective budget and economic policy. (CBO participated in this event in both April and November.)
- A presentation on [how CBO adjusts for underreporting of means-tested transfers in its distributional analyses](#) (at the Bureau of Labor Statistics' 2021 Consumption Symposium) explained those adjustments.
- A presentation on [understanding productivity growth in CBO's economic forecast](#) (at the NABE Foundation's 18th Annual Economic Measurement Seminar) described CBO's most recent 10-year projections of potential output, highlighting the importance of potential total factor productivity.
- A presentation on [CBO's support of the U.S. Congress](#) (to the National Assembly Budget Office, Republic of Korea) described CBO's role in the legislative process.
- A presentation on [legislation that would affect housing assistance programs](#) (to the Council of Large Public Housing Authorities) explained CBO's analysis of provisions in reconciliation recommendations as reported by the House Committee on Financial Services.

CBO also presented work that offered an overview of recent analyses and estimates.

- A presentation on long-term care services and supports (to the National Tax Association) analyzed policy options for providing those services in a single-payer health system.
 - A presentation on the 2019 update to CBO's economic forecasting record (to the Organisation for Economic Co-operation and Development's Working Party of Senior Budget Officials) explained how CBO measures the quality of its forecast and compared its forecasts with those of the Administration and the *Blue Chip* consensus forecast.
 - A presentation on CBO's budget and economic analysis during the pandemic (to the Council for Affordable Health Coverage) described some of the challenges involved in analyzing current economic policy. (A similar presentation was given at Brown University.)
 - A presentation on CBO's forecast of potential output (at the NABE Foundation's 17th Annual Economic Measurement Seminar) described the importance of potential total factor productivity in projections of potential output and explored possible explanations for the historic slowdown in total factor productivity.
 - A presentation on Navy shipbuilding (to the American Shipbuilding Suppliers Association) examined the implications of the Navy's shipbuilding plans on the size and composition of the fleet.
 - A presentation on CBO's updated budget projections (to the National Conference of State Legislatures Base Camp) provided an overview of CBO's most recent forecast. (Similar presentations were delivered to J.P. Morgan's virtual investor meeting, the American Council for Capital Formation, and the Society of Government Economists.)
 - A presentation on approaches for adjusting military cash pay (at the Annual Conference of the Western Economic Association International) described the effect of using a military-adjusted index to modify compensation in the armed forces.
 - A presentation on Vietnam veterans' income in retirement (at the Annual Conference of the Western Economic Association International) gave an overview of CBO's analysis comparing the income of male Vietnam veterans with the income of male nonveterans of the same ages.
 - A presentation on the capacity of the Navy's shipyards to maintain its submarines (at the Annual Conference of the Western Economic Association International) described the effects and expected duration of delays in the maintenance of the submarine fleet.
 - A presentation on the effect of employer matching and defaults on workers' savings behavior in the Thrift Savings Plans (TSP) (to the Savings and Retirement Foundation) provided information on an empirical model used by CBO to forecast the effects of changes to the TSP for federal retirees.
 - A presentation on the Long-Term Budget Outlook (to the Conference Board) provided an overview of the 2021 update to that recurring report. (Similar presentations were given to the Forecasters Club of New York, *Institutional Investor's* Fixed Income Forum, the International Finance's Washington Policy Summit, the Committee for Economic Development of the Conference Board, and the National Association for Business Economics.)
 - A presentation on the historical decline in real interest rates and its implications for CBO's projections (at the 23rd Federal Forecasters Conference) described CBO's forecast of interest rates and the effect of past declines on that forecast.
 - A presentation on the cost of the federal student loan programs and repayment plans (to the Postsecondary National Policy Institute) explained CBO's estimates for those programs under both the accrual-based and cash-based methods of accounting.
- CBO staff also gave presentations about work currently in progress. Both the presentation of findings and the overview of current work allowed CBO staff to offer explanations, answer questions, and gather feedback to improve the quality of future work.
- A presentation on shipbuilding and expeditionary warfare operations (at the 2021 Virtual Expeditionary Warfare Conference) examined the implications for the size and composition of the fleet as proposed in the Navy's December 2020 shipbuilding plan.
 - A presentation on Navy shipbuilding (at the Surface Navy Association's 33rd Annual Symposium) examined the Navy's December 2020 shipbuilding plan and its implications for the size and composition of the fleet. (A similar presentation was given to the Bank of America Merrill Lynch 2021 Defense Outlook and Commercial Aerospace Forum.)

CBO also responded to questions from several Members of Congress:

- A letter answered a question about the national average wage index, which is used in the calculation of Social Security benefits;
- A letter provided information on the breadth of the budgetary effects of the Raise the Wage Act of 2021 compared with other reconciliation legislation;
- A letter provided information about whether a sequestration could be triggered in accordance with the Statutory Pay-As-You-Go Act of 2010 if the American Rescue Plan Act of 2021 was enacted;
- A letter explained how reconciliation legislation would change CBO's February 2021 baseline;
- A letter provided additional information about the budgetary effects of the tax credit for employer-paid sick and family leave;
- A letter offered additional information on the effects of the Hyde Amendment on CBO's estimates of the Labor, Health and Human Services, Education, and Related Agencies Appropriation Bill;
- A letter provided additional information about the budgetary effects of the employee retention tax credit;
- A letter furnished additional information about the projected cost of extending the expanded unemployment compensation enacted in response to the coronavirus pandemic;
- A letter addressed how household income is affected when inflation exceeds the growth of labor income, who pays higher taxes when inflation rises, and how high and unexpected inflation affects economic growth;
- A letter explained CBO's estimate of the budgetary effects of increased funding for tax enforcement activities included in the Build Back Better Act;
- A letter responded to a request for information about CBO's cost estimates for the reconciliation legislation considered by the House of Representatives;
- A letter described the budgetary effects, including the effects on interest costs, of a modified version of the Build Back Better Act, that would make various policies permanent rather than temporary;
- A letter responded to a question about CBO's analysis of the costs of making permanent some of the provisions of the Build Back Better Act; and
- A letter summarized the agency's recent analysis of the costs of making permanent some of the policies in the Build Back Better Act.

Communications Infrastructure. In 2021, CBO upgraded the open-source content management system that powers its website to the latest version. That upgrade provides a stronger foundation for future innovations. In addition, the agency worked to ensure that its website is easy to navigate. The website includes a section that collects CBO's work on legislation and issues related to the coronavirus pandemic, and another section compiles all estimates and supplemental materials related to the budget reconciliation process.

CBO also began permitting electronic access to financial disclosure statements for members of its panels of advisers upon request in 2021. That access replicates the experience users would have if they had reviewed the statements in CBO's offices.

About This Document

The Congressional Budget Office prepared this report in fulfillment of its requirement to provide details on its transparency plans. It was written by Lara Robillard.

Jeffrey Kling reviewed the report. Caitlin Verboon edited it, and R. L. Rebach designed the cover and prepared the text for publication. Elizabeth Ash fact-checked the report. It is available at www.cbo.gov/publication/57701.

The agency seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.



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Director
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